

DATE: August 9, 2004

TO: NITC Technology Panel

FROM: Roger Hahn

SUBJECT: Public Comment on "Video and Audio Compression Standard for Synchronous Distance Learning and Video Conferencing"

The following comments will not have any impact on your conclusions but are being submitted to make the document more factually accurate.

- Report >> Page 5 of 64 >> paragraph 3.4 MPEG-2

"Test showed that MPEG-2 quality is not acceptable to distance education users below 2Mbps." While this statement is true, many people will be questioning why would you test MPEG-2 at a data rate as low as 2Mbps. MPEG-2 was never designed to be used for distance learning at that low of a bit rate. The two MPEG-2 consortiums in the State of Nebraska are running at either 4Mbps or 5Mbps

Testing MPEG-2 at 2Mbps totally misrepresented MPEG-2 as a viable option for higher quality distance learning in Nebraska. And at only a minimal higher cost than the lower rates, being recommended for the standard, our students could have continued with the quality that they have become accustomed to in their learning environment.

The transportation cost outside of their own geographic area would be the same with MPEG-2 as with the recommended standard >> contrary to what is stated in this paragraph. And MPEG-2 would not have limited the interconnection over a wider geographic area >> contrary to what is stated in this paragraph.

The only somewhat valid reason for eliminating MPEG-2 is that there apparently was a decision made to not have any MPEG-2 to H.264 Gateways in the network. These gateways that the vendors were willing to furnish at no cost is obviously what would have allowed the wider area connectivity and would have made the transport cost the same as for the chosen standard to interconnect all parts of the state. MPEG-2 would have been on an IP Network and thus no routing or scheduling system complications.

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I suggest that for the accuracy of an otherwise outstanding document, that a simple statement be made that MPEG-2 was not included because a decision was made not to have any MPEG-2 to H.264 Gateways in the Network. Of course it would be appropriate to mention the characteristic of MPEG-2 Network.

= Report >> Page 5 of 64 >> paragraph 3.6 MPEG-2 Transition

“However, every effort is being made to supplement the H.264 upgrade with alternative funding so that these MPEG-2 sites will be able to interconnect with hundreds of other schools.”

The Crossroads Distance Learning Consortium MPEG-2 schools and other sites are currently interconnected with five other distance learning consortiums that includes a total of about 90 distance learning sites outside of the Crossroads Consortium. In about two weeks the number of distance learning consortiums that they can connect to will increase from 5 to 7. And the number of sites they can interconnect to will increase from about 90 to about 110. The Sandhills

Technology Education Project (Consortium) was to be interconnected to all of these sites but declined the opportunity, at the time, due to not seeing any great value. There would have been some incremental added costs, but not a major cost per school

I suggest that the statement simply be changed to say, so they can continue current possibly interconnections and add interconnections without the use of Gateways.

- Report >> Page 19 of 64 >> Costs >> Paragraph ©).

‘If the current connectivity provider would permit purchase of bandwidth on a flexible use basis’ A point in passing >> the educational purchasers do not want to purchase in increments of bandwidth as they are relying on one-time up-front “grant type” funding.

- Report >> Page 20 of 64 >> Bandwidth (a.)

“Below 2 Mbps the quality drops off quickly.” This is an irrelevant discussion and should be omitted because, as mentioned before, it was never intended by anyone to operate

MPEG-2 below 3 Mbps and most likely at 4 Mbps.

- Report >> Page 20 of 64 >> Compatibility (a.)

“Upgrade to MPEG-4 Part 10 (H.264) is really a complete replacement” Please review this statement in light of the new information being released by Ahead Communications ... your far more expert in this area than I..

Thank you for the opportunity to provide input. We are looking forward to working on technology upgrades according to your recommendations.

Sincerely,

Roger Hahn

From: Robert Hays [rhays@esu11.org]
Sent: Thursday, August 12, 2004 11:15 PM
To: info@cio.state.ne.us
Subject: Comment on Video and Audio Compression Standard

To: NITC Technical Panel
Re: Comment on Video and Audio Compression Standard for Synchronous Distance Learning and VideoConferencing

I do not claim to be a technical expert on this subject, but I would like to share my view.

As I read the document, I do not get a sense or feeling of encouragement or support for emerging technology. The standard seems to be written to be restrictive instead of promotive. Compression technology will continue to evolve and improve in all aspects of communication, allowing for increased speed and decreased bandwidth.

Desktop video conferencing is growing rapidly. Unless something artificially restrictive gets in the way, classrooms and individuals will be able to communicate with each other without the need for specialized distance learning classrooms. Current capabilities are to the point where individuals or classrooms can connect with each other over traditional internet 1 lines with acceptable clarity and ease; and without any significant outlay of funds. As Internet2 gains in use, this capability will only increase. I am excited about the possibilities.

Thank you.

Bob

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*****A mind that is stretched to a new idea
never returns to its original dimensions*****



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August 13, 2004

Mr. Tom Rolfes
Education IT Manager
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State of Nebraska
521 S. 14th Street, Executive Building
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Lincoln, NE 68508-2707

Dear Tom,

Thank you for the opportunity to submit public comments on the Distance Learning and Video Conferencing project for the State of Nebraska and the Nebraska Information Technology Commission's Technical Panel. Below are the comments made by our engineering heads for Marconi's distance learning solution.

**Marconi Comments to Video and Audio Compression Standard
for Synchronous Distance Learning and Videoconferencing**

1. Section 1.1 – The use of H.264 will provide superior video quality both above and below 384 Kbps. This section should identify H.264 as the preferred video codec at all data rates. It may be better to state that H.264 is required at data rates below 384 Kbps and that H.263 is considered acceptable at data rates above 384 Kbps.
2. It appears that the NITC standard does not address Session Initiation Protocol (SIP) compliant devices as opposed to H.32x compliant devices. Products such as Marconi's ViPr integrates voice, video, and data over an architecture based on Session Initiation Protocol (SIP) standards, leveraging the Quality of Service (QoS) of a modern network and enabling geographically dispersed locations to communicate virtually, transparently, and naturally.

Developed in the 1990s by the Internet Engineering Task Force (IETF), SIP is a standard text-based signaling protocol for interactive, multimedia communication sessions, including conferencing, telephony, and presence, between users. SIP makes it possible for users to initiate and receive communications and services from any location and for networks to identify the users wherever they are.

The NITC standard should consider SIP based video devices as acceptable devices to be evaluated to meet the present and future needs of their Distance Learning application.

Service Providers worldwide are investing in SIP based Voice over IP (VoIP) infrastructure to deliver multimedia applications. Installing a SIP based system would allow NITC to leverage the investments being made by the US based Service Providers.

3. There is significant value in the concept of ad-hoc conferencing that is discussed in the referenced 64-page report but not called out in NITC standard itself. More consideration should be given to this aspect which allows for a system which can be more flexible in its use and applicability.

We look forward to working with Nebraska on this project and being part of your technology initiatives.

Best Regards,

Grant Miller
Director, State & Local Government Programs

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